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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,239	11/28/2001	Hans Steinbichler	298-147	2967

7590 12/05/2003

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EXAMINER	
LYONS, MICHAEL A	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/996,239	STEINBICHLER ET AL.	
	Examiner	Art Unit	
	Michael A. Lyons	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 28-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tenjimbayashi (5,467,184).

Regarding claims 28, Tenjimbayashi (column 1, lines 49-64) discloses a method of deformation measurement by forming a series of speckle images as the object under test is undergoing deformation, forming a differential between "an appropriate two of the plurality of speckle images", and then adding the differential to other differentials and images (the first image being implied) to determine the deformation of the object. Tenjimbayashi's method, however, relies on speckle images rather than the phase images as claimed.

Tenjimbayashi's speckle images, however, serve the same function as the phase images in the current application. The speckle images, and their differentials, when added together, provide an accurate observation of the deformation of the test object. As a result, the speckle images and phase images serve as functional equivalents, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the phase images of the current application for the speckle images of Tenjimbayashi, as using either (interference) phase images and (interference) speckle images would generate the same, desired results.

Regarding claim 50, Tenjimbayashi (Fig. 1) discloses an interferometer (elements 2, 3, 4, 5, 6, 7, 8, and 11) to record a sequence of images from the object, an evaluation device (12, 13, 14), and a cable (no element number) connecting the camera 11 with the evaluation device. Tenjimbayashi's device, however, relies on speckle images rather than the phase images as claimed.

Tenjimbayashi's speckle images, however, serve the same function as the phase images in the current application. The speckle images, and their differentials, when added together, provide an accurate observation of the deformation of the test object. As a result, the speckle images and phase images serve as functional equivalents, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the phase images of the current application for the speckle images of Tenjimbayashi, as using either (interference) phase images and (interference) speckle images would generate the same, desired results.

As for claims 29 and 51, the process of Tenjimbayashi is repeated, leading to each newly formed differential being added to the preceding image.

As for claim 30 and 52, Tenjimbayashi discloses an interferometer (Fig. 1).

As for claim 31, Tenjimbayashi uses an electronic speckle pattern interferometer (Fig. 1).

As for claim 32, each speckle image is recorded individually, "one after another" (Col. 3, line 66-67).

As for claims 33-34 and 53-54, Tenjimbayashi discloses laser 2.

As for claim 35, having more than one laser is a matter of duplication of parts, and it would have been obvious to one having ordinary skill in the art at the time the invention was made to use multiple lasers as claimed, since it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.,* 193 USPQ 8.

As for claims 36 and 55, Tenjimbayashi's device is not a hand-held sensor. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct Tenjimbayashi's device as a hand-held sensor, since it has been held that making an old device portable or movable without producing any new and unexpected result involves only routine skill in the art. *In re Lindberg*, 93 USPQ 23 (CCPA 1952).

As for claims 37-38 and 41-43, 45, and 49, Official Notice is taken as to the practice of removing undesired information from a data set, as doing so would improve the final result of observations made.

As for claims 39 and 56, Tenjimbayashi discloses the use of a TV camera 11, which would visualize the recorded images as a film.

As for claim 40, Official Notice is taken as to the normal comparison of images as being routine in experimentation.

As for claim 44, Tenjimbayashi discloses the claimed method, as using the first image as a starting image is satisfactory.

As for claims 46-48, all the minor adjustments and qualifications in the method are matters of design choice, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement these changes to the method of Tenjimbayashi as these changes would still result in the same, desired result of the use of the method.

Response to Arguments

Applicant's arguments, see amendment filed September 22, 2003, with respect to the rejection(s)of claim(s) 1-27 under USC 102 and 103 with US Pat. 5,481,356 to Pouet et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Tenjimbayashi as a result of the new set of claims presented in the amendment.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on September 22, 2003 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 703-305-1933. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 703-308-4877. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

MAL
November 24, 2003

Samuel A. Turner
Primary Examiner